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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,486	07/12/2005	Volker Sanchen	095309.55683US	5529

23911 7590 04/01/2008
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EXAMINER

WALTERS, JOHN DANIEL

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,486

Applicant(s)

SANCHEN, VOLKER

Examiner

JOHN D. WALTERS

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date 20041220
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claims 1 – 11 have been examined.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:

- reference character “18” has been used to designate both an automotive transmission and a first clutch;
- reference character “22” has been used to designate both vehicle wheels and a secondary unit.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

Claims 1 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (6,615,940) in view of Kinya (EP1286405), disclosed by Applicant. Morisawa discloses a control system for a fuel cell vehicle comprising:

- an internal combustion engine (Fig. 1, item 14);
- at least one electrical machine (Fig. 1, item MG2);
- at least one electrical energy storage mechanism (Fig. 1, item 94);
- a fuel cell system (Fig. 1, item FC);
- said fuel cell system being designed to be an auxiliary power source for said vehicle (Fig. 5);
- a control unit (Fig. 1, item 110);
- said fuel cell system supplying at least one power consuming device (Fig. 1, un-numbered component labeled "vehicle electric system");
- said fuel cell system supplying power to said energy storage mechanism (column 5, lines 60 – 65);
- said fuel cell system supplying power to said at least one electric machine (column 5, lines 60 – 65);
- supplying said at least one electric machine and said at least one energy storage mechanism is based on drive power demand, charge status and maximum charge capacity of said at least one electrical energy storage mechanism (column 6, line 55 through column 7, line 41).

Morisawa does not disclose the use of a fuel cell which operates at a constant output. Kinya, however, discloses a fuel cell and battery system for a vehicle comprising:

- a fuel cell which operates within a predetermined operating range (paragraph 10);
- said predetermined operating range is at or near a maximum efficiency of said fuel cell (paragraph 11);
- said fuel cell being used to power a navigation system (paragraph 112).

In regards to claims 6 and 7, a wide range of fuel cell outputs are known and used within the art. One of ordinary skill in the art would possess the knowledge and ability to properly size said fuel cell in order to provide the proper operating range for the needs of a vehicle in which said fuel cell is to be used, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to combine the constant power fuel cell of Kinya with the fuel cell vehicle of Morisawa in order to efficiently utilize said fuel cell while ensuring good output responsiveness (Kinya Abstract).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Keller et al. (3,850,695) disclose a voltage regulator system for use with a fuel cell battery;
- Merritt et al. (5,366,821) disclose a constant voltage fuel cell with improved reactant supply and control system;
- Azuma et al. (5,631,532) disclose a fuel cell/battery hybrid power system for a vehicle;
- Ukita (5,905,360) discloses a battery system and electric motor vehicle;
- Tabata (6,672,415) discloses a moving object with fuel cells and a method for controlling same;
- Aberle et al. (6,777,909) disclose a device for generating electric energy in a motor vehicle by means of a fuel cell;
- Dickman et al. (6,835,481) disclose a fuel cell system with load management;
- Iwasaki (7,059,436) discloses an operating load control for a fuel cell power system;
- Severinsky et al. (7,237,634) disclose a hybrid vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN D. WALTERS whose telephone number is (571)272-8269. The examiner can normally be reached on Monday - Friday, 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher P Ellis/
Supervisory Patent Examiner, Art Unit 3618

John D. Walters
Examiner
Art Unit 3618

/J. D. W./
Examiner, Art Unit 3618